



Marbling 4 Tenderness 4 Feed Efficiency 4 Results Explanation

The current GeneSTAR[®] test includes a suite of 12 markers: 4 markers for Marbling, 4 markers for Tenderness and 4 markers for Feed Efficiency. Results are reported as a star result for each individual marker, and also as a combined star rating for each trait. There is a maximum of 8 stars available for any one of these traits. Results should be treated independently for each trait.

For each single marker it is possible to obtain a result of 0, 1 or 2 Stars as one allele (or half of the marker) is inherited from the sire and one allele from the dam. An animal can inherit a 0 Star from both the Sire and Dam (in which case it will be a **0 Star** for that marker), or inherit a 1 Star from one parent and a 0 Star from the other (which makes it a **1 Star** for that marker), or a 1 Star from both parents (which makes it a **2 Star** for that marker).



Hence it is possible, as we test for four DNA markers for each trait, to obtain an eight star result for each trait, calculated by adding up the stars for each individual marker. Results for each marker within a trait are additive, which means **the more stars, the better**.

GeneSTAR[®] Marbling4 is a test for four separate DNA markers that impact on marbling. The more stars, the more likely the animal is to produce higher marbling scores. An animal with 8 stars for marbling has the best possible result on the current scale of tests and will on average have a higher marble score than an animal with a lower GeneSTAR[®] Marbling star result.

GeneSTAR[®] Tenderness4 is a test for four markers that impact on Tenderness in the carcass. The more stars an animal has for tenderness, the more tender it is likely to be.

GeneSTAR[®] Feed Efficiency4 is a test for four separate DNA markers that affect an animal's Feed Efficiency. The more stars an animal has for feed efficiency, the less feed it will consume to gain the same weight.

For more information please see the GeneSTAR[®] M4T4FE4 Technical Note

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- GeneSTAR[®] tests are for individual markers for specific traits.
 - The **frequency** of individual GeneSTAR[®] markers for each trait are **independent** of each other. This means for example, that the frequency of the M2 marker is not influenced by the frequency of the M1 marker. The traits are also independent of each other ie. The frequency of tenderness markers are not influenced by marbling or feed efficiency markers.
 - The **effects** of each marker are also independent and **additive** for each trait. As above, the **effect** of each marker is not influenced by any of the others. For example T4 marker effect is not influenced by the T2 effect and the total tenderness effect is T1 + T2 + T3 + T4.
 - Results are reported for individual markers within a trait which gives very **valuable genetic information** on an animal. This means it is easy to identify where improvements can be made, and make breeding and selection decisions to bring about **rapid genetic progress** in a herd.